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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CASCA, FRED A	

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,299	LEHTINEN ET AL.	
	Examiner	Art Unit	
	Fred A. Casca	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *May 24, 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-12,14,15,17-21 and 23-27* is/are rejected.

7)☒ Claim(s) *5,13,16 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's pre-appeal request filed on May 24, 2006. Claims 1-27 are still pending in the present application.

2. Applicant's arguments, filed on January 19, 2006, with respect to the rejection(s) of claims 1-27 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection and the finality of that action have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Wijk (U.S. Patent No. 5,995,836).

3. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 4, 6-7, 9, 12, 14-15, 17, 20, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No. 5,995,836).

Referring to claim 1, Pederson discloses a method of selecting a handover parameter in a cellular network (Abstract, and col. 2, lines 25-60), said method comprising the steps of:

selecting the handover parameter from a plurality of handover parameters (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "at least one set of handover parameters");

setting said selected handover parameter (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "a predetermined handover trigger", "first threshold", "second threshold").

Pederson does not specifically disclose **measuring a delay of a handover procedure**, and setting said handover parameter based on the result of **measured delay**.

Wijk discloses **measuring a delay of a handover procedure**, and setting the handover parameter **based on the result of measured delay** (abstract, and col. 3, lines 15-31, **col. 5, lines 45-61**, and col. 6, lines 4-34, "variable hysteresis", "hysteresis value is made time variable based upon a duration of the current connection . . . specifically, immediately after the mobile station has established a connection, i.e, via call setup or handoff, the time variant hysteresis value will be set", note that the time to establish a connection via handoff inherently corresponds to a handoff delay).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk by providing setting the H.O parameter (varying the hysteresis value) of Peterson based on measuring a delay of a handover procedure (the time it takes to establish a connection via handoff), motivation being for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 2, the combination of Pederson/Wijk disclose the method according to claim 1, and further disclose the measuring step comprises measuring the delay of the handover procedure and wherein the handover comprises a hysteresis value for a handover threshold (Wijk, abstract, and col. 3, lines 15-31, **col. 5, lines 45-61**, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 4, the combination of Pederson/Wijk disclose the method of claim 1, and inherently disclose the measuring step comprises measuring the delay of the handover procedure and handover delay comprises *at least one of* a round trip delay of a physical layer protocol signaling, a delay between a radio network controlling device and a base station device, *a measurement delay at a terminal device*, and a processing delay of said cellular network (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34, note a delay is measured after a connection has been established, hence all the activities that cause the delay are inherently accounted for including processing/measurement delay, round trip signal delay, signal transfer between nodes delay, . . . etc.).

Referring to claim 6, the combination of Pederson/Wijk disclose the method of claim 1, and further disclose the setting step comprises setting the handover parameter and the handover parameter is tuned dynamically based on the result of the measuring step (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 7, the combinations of Pederson/Wijk disclose the method of claim 1, and further disclose comparing the result of the measuring step with a predetermined threshold (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 9, the combination of Pederson/Wijk disclose the method of claim 7, and further disclose the steps of setting the handover parameter to a first value when the measured handover delay is smaller than the predetermined threshold, and setting the handover parameter to a second value when the measured handover delay is not smaller than the predetermined threshold (Pederson, col. 2, lines 25-42).

Referring to claim 12, the combination of Pederson/Wijk disclose the method according to claim 1, and inherently disclose calculating or deducing delay from a standard protocol message by using a common time reference (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34, note that every type of communication inherently takes place according to a standard communication protocol, and further note that the hysteresis value is made time variable and thus time reference).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 14, Pederson discloses a network device for selecting a handover parameter in a cellular network (Abstract, and col. 2, lines 25-60), said device comprising

selecting means for selecting the handover parameter from a plurality of handover parameters (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "at least one set of handover parameters");

setting means for setting said selected handover parameter (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "a predetermined handover trigger", "first threshold", "second threshold").

Pederson does not specifically disclose **measuring means for measuring a delay of a handover procedure**, and setting said handover parameter **in response to said measured delay**.

Wijk discloses **measuring a delay of a handover procedure**, and setting the handover parameter **based on the result of measured delay** (abstract, and col. 3, lines 15-31, **col. 5, lines 45-61**, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the network device of Pederson by incorporating the teachings of Wijk by providing setting means for setting the H.O parameter (varying the hysteresis value) of Peterson based on measuring a delay of a handover procedure (the time it takes to establish a connection via handoff), motivation being for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 17, the combination of Pederson/Wijk disclose the device according to claim 14, and further disclose handover parameter comprises a hysteresis value for a handover threshold (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 20, the combination of Pederson/Wijk disclose the device according to claim 14, and inherently disclose calculating or deducing said delay from a standard protocol message by using a common time reference (Wijk, abstract, and col. 3,

lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34, note that every type of communication inherently takes place according to a standard communication protocol, and further note that the hysteresis value is made time variable and thus time reference).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the device of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 15 the combination of Pederson/Wijk disclose the method of claim 14 and inherently disclose the handover delay comprises *at least one of* a round trip delay of a physical layer protocol signaling, a delay between a radio network controlling device and a base station device, *a measurement delay at a terminal device*, and a processing delay of said cellular network (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34, note a delay is measured after a connection has been established, hence all the activities that cause the delay are inherently accounted for including processing/measurement delay, round trip signal delay, signal transfer between nodes delay, . . . etc.).

Referring to claim 26, Pederson discloses a network device for selecting a handover parameter in a cellular network (Abstract, and col. 2, lines 25-60), said device comprising:

a selector unit electing the handover parameter from a plurality of handover parameters (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "at least one set of handover parameters"); and

a selection unit for setting said selected handover parameter (Abstract, and col. 2, lines 25-60, and col. 3, lines 5-60, "at least one set of handover parameters").

Pederson does not specifically disclose **a measuring unit for measuring a delay of a handover procedure**, and setting said handover parameter **in response to measuring delay**.

Wijk discloses a **measuring unit for measuring a delay of a handover procedure**, and setting the handover procedure **based on the result of measured delay** (abstract, and col. 3, lines 15-31, **col. 5, lines 45-61**, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the network device of Pederson by incorporating the teachings of Wijk by providing setting the H.O parameter (varying the hysteresis value) of Peterson based on measuring a delay of a handover procedure (the time it takes to establish a connection via handoff), motivation being for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

Referring to claim 27, the combination of Pederson/Wijk disclose the device according to claim 26, and further disclose selection unit comprises a **hysteresis** selection unit (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the device of Pederson by incorporating the teachings of Wijk, for the purpose of minimizing inadvertent handoffs due to fluctuations in signal strength so that a mobile station operating near cell borders don't experience a "ping-pong" effect between base stations and consequently providing a more efficient handover procedure.

6. Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of Liang (U.S. Pub. No. 2003/0157934 A1).

Referring to claim 3, the combination of Pederson/Wijk disclose the method of claim 1, and further disclose the measuring step comprises measuring the delay of the handover procedure (Wijk, abstract, and col. 3, lines 15-31, col. 5, lines 45-61, and col. 6, lines 4-34).

The combination of Pederson/Wijk does not specifically the handover parameter comprises a length of an averaging window used for measuring transmission quality of a radio connection.

Liang discloses the handover parameter comprises a length of an averaging window used for measuring transmission quality of a radio connection (Liang, paragraph 0045, "averaging window").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk by utilizing length of an averaging window technique, for the purpose of providing a more efficient handover process.

Referring to claim 18, the combinations of Pederson/Wijk disclose the device of claim 14.

The combination of Pederson/Wijk does not specifically the handover parameter comprises a length of an averaging window used for measuring transmission quality of a radio connection.

Liang discloses the handover parameter comprises a length of an averaging window used for measuring transmission quality of a radio connection (Liang, paragraph 0045, "averaging window").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk by providing an averaging window used for measuring transmission quality of a radio connection, for the purpose of providing a more efficient handover process.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of U.S Pub. No. 20040219919 A1, Whinnet et al.

Referring to claim 8, the combination of Pederson/Wijk disclose the method according to claim 7, and further disclose comparing step comprises said predetermined threshold (Pederson, col.2, lines 25-42, "threshold").

The combination of Pederson/Wijk does not disclose the comparing step comprises the predetermined threshold corresponding to a hysteresis value of at least approximately 200ms.

Whinnet discloses that predetermined threshold corresponding to a hysteresis value of at least approximately 200ms (paragraph 0084, "500 ms")

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk by providing an approximate value range for hysteresis, e.g., 500 ms, as suggested by Whinnet, for the purpose of providing an efficient handover procedure.

8. Claims 10 and 19 are are rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of U.S Pub. No. 20020018010 A1, Le.

Referring to claim 10, the combination of Pederson/Wijk disclose the method according claim 1.

The combination of Pederson/Wijk does not disclose measuring an acknowledged mode round trip delay and estimating a peer-to-peer signaling delay based on the measured round trip delay.

Le discloses measuring an acknowledged mode round trip delay estimating a peer to peer signaling delay based on the measured round trip delay (paragraphs 0115 and 0165).

It would have been obvious to one of the ordinary skill in the art at time of the invention to modify the system of Pederson/Wijk by providing measuring step to comprise measuring an acknowledged mode round trip delay and estimate a peer-to-peer signaling delay based on the measured round trip delay, motivation being for the purpose of providing a more compete measuring step.

Referring to claim 19, the combination of Pederson/Wijk disclose the device according to claim 14.

The combination of Pederson/Wijk does not disclose measuring an acknowledged mode round trip delay and estimating a peer-to-peer signaling delay based on the measured round trip delay.

Le discloses measuring an acknowledged mode round trip delay estimating a peer to peer signaling delay based on the measured round trip delay (paragraphs 0115 and 0165).

It would have been obvious to one of the ordinary skill in the art at time of the invention to modify the system of Pederson/Wijk by providing measuring step to comprise measuring an acknowledged mode round trip delay and estimate a peer-to-peer signaling delay based on the measured round trip delay, motivation being for the purpose of providing a more compete measuring step.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), further in view of U.S Pub. No. 2002/0018010 A1, Le, and further in view of U.S. Patent No. 6,735,436, McCauley et al.

Referring to claim 11, the combination of Pederson/Wijk/Le disclose the method according to claim 10.

The combination of Pederson/Wijk/Le does not disclose measuring step is based on a counting operation for counting time stamps.

McCauley discloses measuring step is based on a counting operation for counting time stamps (col. 8, line 51 through col. 9, line 12).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk /Le by providing measuring step to be based on a counting operation for counting time stamps, motivation being to provide an efficient measuring system.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of U.S Pub. No. 20040219919 A1, Whinnet et al.

Referring to claim 21, the combination of Pederson/Wijk/Edge disclose the device according to claim 20.

The combination of Pederson/Wijk/Edge does not disclose measuring means is arranged to use a common time reference for calculating or deducing said handover delay.

Whinnet discloses a common time reference for calculating or deducing the handover delay (paragraph 0084, "500 ms").

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk/Edge by providing an approximate value range for e.g., 500ms for hysteresis, as suggested by Whinnet, for calculating or deducing the handover delay for the purpose of the purpose of providing an efficient handover procedure.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of U.S Pub. No. 2002/0018010 A1; Le, and further in view of U.S Pub. No. 20020107031 A1, Syrjarinne et al.

Referring to claim 23, the combination of Pederson/Wijk/Le disclose the device according to claim 19.

The combination of Pederson/Wijk/Le does not disclose measuring means comprises a frame counter for keeping a time stamp.

Syrjarinne discloses a frame counter for keeping a time stamp in time synchronization for cellular phones (paragraphs 0020, 0023).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk/Le by providing measuring means to comprise a frame counter for keeping a time stamp, as suggested by Syrjarinne, motivation being to provide more efficient measuring system.

12. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pederson et al (U.S. Patent No. 6,993,332 B2), in view of Wijk (U.S. Patent No.5,995,836), and further in view of U.S Pub. No. 2004/0053606 A1, Artamo et al.

Referring to claim 24, the combination of Pederson/Wijk disclose the device according to claim 14.

The combination of Pederson/Wijk does not disclose the network device is a device responsible for handover in said cellular network.

Artamo discloses a network device such as radio network controller responsible for handover responsible for handover in the cellular network.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk by providing a radio network controller responsible for handover responsible for handover in the cellular network, as suggested by Artamo, for the purpose of providing an efficient handover method.

Referring to claim 25, the combination of Pederson/Wijk disclose the device according to claim 14.

The combination of Pederson/Wijk does not disclose the network device is a radio network controller.

Artamo discloses a network device such as radio network controller responsible for handover responsible for handover in the cellular network.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Pederson/Wijk by providing a radio network controller responsible for handover responsible for handover in the cellular network, as suggested by Artamo, for the purpose of providing an efficient handover method.

Allowable Subject Matter

13. Claims 5, 13, 16, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid, can be reached at (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER